USSR / Cultivated Plants. Grains. M-2

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24966

Abstract: the side-dressing with N decreased and side-dressing with P increased the drought resistance of the plants. The 1 and 2 content of the plants which had withstood the drought remained lower even after the period of aridity than those plants which developed under conditions of adequate moisture supply. When N and P were applied as side-dressing, besides the variation in yield, changes were observed in the plants' content of general N and P and the remaining fractions of phosphorus compounds. The highest yield was obtained during development in 70% moisture with the application of increased doses of NPK; augmented moisture up to 90% of the full retention capacity cut the wheat output. Side-dressing the young plants with N + 2P showed a more positive effect on plant drought resistance and out-

Card 3/4

SAMOSILOV, P.V.

Agriculture

Irrigation system of the collective farm. Moskav, Sel'khozgiz, 1951.

MONTHLY LIST OF RUSSIAN ACCESSIONS, LIBRARY OF CONGRESS, NOVEMBER 1952. UNCLASSIFIED.

SAMOSTRELOV, P.V.

BOROVOY, A.A., red.; VASIL'YEV, P.I., red.; GIRSHKAN, I.A., red.; IORISH, Ye.L., red.; KRUKOVSKIY, M.Ya., red.; SAMOSTRELOV, P.V., red.; ZABRODINA, A.A., tekhn. red.

[Designing and building large dams; from papers of the Fifth International Congress on Large Dams] Proektirovanie i stroitel'stvo bol'shikh plotin; po materialam V Mezhdunarodnogo kongressa po bol'shim plotinam. Moskva, Gos. energ. izd-vo, 1958. 414 p. (MIRA 11:10)

(Dams)

KRAVTSOV, V.I., starshiy nauchnyy sotrudnik, kand.tekhn.nauk; SAMOSTRELOV, P.V., starshiy nauchnyy sotrudnik, kand.tekhn.nauk

Experimental Institute of Models and Structures in the city of Bergamo, Italy. Izv.VNIIG 62:19-39 '59. (MIRA 13:6)
(Bergamo--Hydraulic engineering--Research)

GINZBURG, M.B., kand.tekhn.nauk; SAMOSTRELOV, P.V, kand.tekhn.nauk

Collapse of the Malpasset Dam. Gidr. stroi. 30 no.4:53-55 Ap '60.
(MIRA 14:4)

(Malpasset Dam)

ADONAYLO, A.M.; SAMOSTREL'SKIY, A.Yu.

Quarantine periods for whooping cough. Trudy LSGMI 32:95-99 '57. (MIRA 12:8)

1. Kafedra epidemoplogii Leningradskogo sanitarno-gigiyenicheskogo instituta (zav.kafedroy - prof. V.A.Bashenin).
(WHOOPING COUGH, prev. & control
quarantine, problems in shortening period (Rus))

SAMOSTREL'SKIY, A.Yu.

Epidemiological characteristics of actively virulent tuberculosis patients. Trudy LSGMI 46:295-304 '69. (MIRA 13:11)

1. Kafedra epidemiologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof. V.A.Bashenin).
(TUBERCULOSIS)

BATANOV, N., kapitan; KHRAMOV, I., starshiy shturman; IVANOV, B., vtoroy shturman; SAMOSTROV, G., tretiy shturman; MANZHULA, A., chetvertyy shturman

Supporting Captain Rusanov's proposals. Mor. flot 24 no.2:23 F '64. (MIRA 18:12)

1. Teplokhod "Rovno".

SAMOSTSVETOVA, E. A.

Samostsvetova, E. A., Lebedeva, O. P., and Bel'tiyukova, K. I. "Bacterial 'Ryaboukha' of Makhorka and Cigar Tobacco, and Its Causal Agents," Biulleten' Vsesoiuznogo Nauchno-Issledovatel'skikh Instituta Tabachnoi i Makhorochnoi Promyshlennosti imeni A. I. Mikoiana, no. 126, 1936. pp. 5-16. 69.9 K86

SO: SIRA S. 90-53, 15 DEC 1953

SAMOSUD, M. I.

22099 YAKUBOVICH, Z. A. i SAMOSUD, M. I.

Kolichestvennyy metod opredeleniya reaktsii vassermana pri lechenii sifilisa penitsillivom. (Doklad na Nauch Konferentsii 1 - go Mosk. med. in - ta ''Penitsillin i Penitsillinoterapiya'' 4 dek. 1946 g.) V sb: Penitsillinote rapiya m., 1949, s. 114-18.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

YAKUBOVICH, Z.A.; SAMOSUD, M.I.

Clinical significance of the quantitative method of Wassermann's reaction; duration of negative Wassermann reaction in early syphilis. Vest. vener. no.2:30-34 Mar-Apr 1951. (CIML 20:9)

1. Docent Z.A. Yakubovich; Candidate Medical Sciences M.I. Samosud. 2. Of the Department of Skin and Venereal Diseases (Head--Prof. V.A. Rakhmanov), First Moscow Order of Lenin Medical Institute.

USSR/Microbiology - Microbiology Pathogenic to Humans and F-4

Abs Jour : Ref Zhur - Biol., No 12, 1958, 52882

Author : Yakubovich, Z.A., Sanosud, M.I.
Inst : -
Title : A Cold Method for Wasserman Reaction.

Orig Pub : Labor. delo, 1957, No 2, 33-35.

Abstract : RSK (blood serum reaction) were examined by cold and thermostatic methods in 3363 sera, 989 of which were from syphilitic patients at different stages. Agreement of results was found in 97.8% of cases. In 50 cases the cold method gave positive results, the thermostatic-negative results. The reverse was found in only 6 cases. 727 sera were checked at the same time by titration methods in the cold and in the thermostat; 138 of these (19%) produced agreement of results; in 580 cases (79.7%) the cold method gave higher titers, and in 9 (1.3%) higher titers were obtained by the thermostatic method. Thus, the cold

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USSR/Microbiology - Microbiology Pathogenic to Humans and F-4

Abs Jour : Ref Zhur - Biol., No 12, 1958, 52882

method of binding the complement by its specificity is approximately equal to the thermostatic one, but considerably exceeds the latter in sensitivity. -- M.A. Gruzman

Card 2/2

RABEN, A. S., kand. med. nauk; SAMOSUD, M. I., kand. med. nauk (Moskva)

Diagnostic value of Kveim's reaction in sarcoidosis. Klin. med. no.2:145-151 '62. (MIRA 15:4)

1. Iz kliniki kozhnykh bolezney (dir. - chlen-korrespondent AMN SSSR prof. V. A. Rakhmanov) i kliniki propedevtiki vnutrennikh bolezney (dir. - deystvitel'nyy chlen AMN SSSR prof. V. Kh. Vasilenko) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I. M. Sechenova.

(GRANULOMA BENIGNUM)

SAMOSUDAVA, N.V.; SLAVSKAYA, M.Ye.

Peculiarities of the ultrastructure of the musculus obturator of the scallop. TSitologiia 3 no. 2:196-198 Mr-Ap '61. (MIRA 14:4)

1. Laboratoriya biofiziki zhivykh struktur Instituta biofiziki AN SSSR, Moskva.
(MUSCLE) (SCALLOPS)

24(5), 24(6) SOV/56-35-5-29/56

AUTHORS: Ivanenko, I. P., Samosudov, B. Ye.

TITLE: Cascade Curves for Copper (Kaskadnyye krivyye dlya medi)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 5, pp 1265-1270 (USSR)

ABSTRACT: In experimental work connected with cosmic radiation, copper or iron ionization chambers are used, which are shielded by filters made from various materials. Sometimes, iron or copper is used also as filtering material, and it is therefore necessary to have sufficiently accurate cascade curves for these elements. (The values obtained for copper can be used also for iron.) Such curves were obtained for copper by the momenta method (Ref 1). When calculating the momenta of the electron distribution curve $\left\{N_p(E_0,0,t)\right\}^{p,\Gamma}$ by means of a recurrence formula (Ref 2), the authors also took the dependence of the total absorption coefficient of the photons $\sigma(E)$ on energy, and also the Rutherford (rezerfordovskoye) scattering of the avalanche of charged particles into account. It is further assumed that the electrons released by electrons or photons of the primary

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energy E_o have an energy in a shower depth t, which is greater than zero. (For $\sigma(E)$ compare the book by Heitler (Gaytler) (Ref 3), a translation of which was published in Moscow.) In the cascade theory depth is measured according to so-called "avalanche length units"; such a t-unit for copper amounts to 11.6 g/cm^2, the critical energy is β = 16.6 MeV. The results obtained by calculating the two first moments $\bar{t}(\varepsilon_o,0)$ and $t^2(\varepsilon_o,0)$ for the primary particle energy ε_o (ε is measured in β/q units, q = 2.29, β - the critical energy) are shown in a table. The cascade curves obtained are shown for a large number of ε_o-values (for a primary photon) in diagrams (Figs 1,2) and for primary electrons (Figs 3,4,5). Figure 5 compares the cascade curves calculated by the authors (according to momenta) with those obtained by using the formula developed by Belen'kiy and Maksimov (Ref 2) as well as with those calculated according to the formula by Ott (Ref 6). There are 3 groups of curves for ε_o = 140, 560 and 1400 (ε_o in β/q units). There are 5 figures,

Cascade Curves for Copper SOV/56-35-5-29/56

1 table, and 7 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: June 2, 1958

Card 3/3

SAMOSUDOV, B. E.

"MEASUREMENT OF COSMIC RAY VARIATION IN THE STRATOSPHERE"

B. E. Samosudov, S. N. Vernov, V. F. Tulinov, A. N. Charakhchian and T. N. Charakhchian

Beginning with July1, 1957 (when the IGY programme began) regular measurements have been made of cosmic ray intensity in the stratosphere at geomagnetic latitudes of 51°N and 64°N, while since March 1958 similar measurements have been taken also at geomagnetic latitude of 41°N. The measurements are made with a single G-M counter. During this period 840 stratosphere observations were made.

1. The data gathered have helped to establish the existence of a 27-day variation of cosmic rays in the stratosphere. The shape of the averaged wave is close to sinusoidal while the period is 27 or 28 days. The wave amplitude, however, changes more than 5-fold in the observed intervals. The obtained values for the amplitude of the 27-day variation in the stratosphere are 8 to 10-fold that of similar data on the Earth.

2. The existence in the stratosphere of long periodical variations of cosmic rays of extra-terrestrial origin has been discovered.

3. Values have been obtained for the cosmc ray latitude effect between latitudes of 64°N, 51°N and 41°N. It has been ascertained that the latitude effect between 64°N and 51°N undergoes substantial changes with time. The latitude effect between these latitudes in the maximum of the intensity curve amounts on the average to several per cent, and goes up abruptly with increase in altitude of observation reaching 15-20% at an altitude of approximately 30 km. Several cases of abnormal increase in

Samosudov, B. E. (continued)

cosmic ray intensity in the stratosphere at the latitude of 64°N have been discovered.

4. A correlation between 27-day variations of cosmic retiation and the floccula on the Sun, and a correlation between the long period cosmic ray variation and Sun spots has been established.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July 1959

ACC NR: AP7008885 SOURCE CODE: UR/0367/66/004/004/0807/0811

AUTHOR: Ivanenko, I. P.; Samosudov, B. Ye.

ORG: Nuclear Physics Institute, Moscow State University (Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Electron and photon equilibrium spectra with polarization of the medium and multiple scattering taken into account

SOURCE: Yadernaya fizika, v. 4, no. 4, 1966, 807-811

TOPIC TAGS: electron spectrum, particle scattering, photon

SUB CODE: 20

ABSTRACT: Expressions are obtained for electron and photon equilibrium spectra, in the B-approximation of the cascade theory, taking the polarization of the medium into account. Expressions are obtained for the equilibrium spectra, taking scattering into account for showers produced by particles with given finite energy E_0. Orig. art. has: 16 formulas and 1 table. [Based on authors' Eng. abst.] [JPRS: 39,658]

Card 1/1 UDC: none

KELOGLU, Yuriy Petrovich; FEDORKO, Anatoliy Stepanovich; SAMOSUDOV, P. red.

[Radioactive devices and their use in industry] Radioaktivnye pribory, ikh primenenie v promyshlennosti. Kishinev, Kartia moldoveniaske, 1964. 166 p. (MIRA 17:11)

SAMOILOV, P.A., inzh.

Determining water consumption in trains by the mechanical operation of steam locomotives. Vest. TSNII MPS 17 no.6: 35-36 S '58. (MIRA 11:11)
(Locomotives) (Railroads--Water supply)

SAMOSUDOVA, N.V.

USSR/Medicine - Histology

Card 1/1 Pub. 22 - 39/45

Authors : Samosudova, N. V.

Title : Electron microscopic study of muscle structure by means of ultra-thin sections

Periodical : Dok. AN SSSR 103/2, 317-319, Jul 11, 1955

Abstract : A new method of obtaining very-thin muscle sections for electron microscopic investigation of their structure is described. Muscle sections obtained by means of the new method were found highly suitable for histological investigations. Eleven references: 8 USA, 1 Ger., 1 Scandinavian and 1 USSR (1939-1954). Illustrations.

Institution : Acad. of Sc., USSR, Inst. of Biophys. and Labor. of Electron Microsc. of the Biolog. Sc., Branch

Presented by : Academician A. I. Oparin, February 25, 1955

SAMOSUDOVA, M.V.

Electron microscope investigation of various states in the contraction of striated muscles [with summary in English]. Biofizika 2 no.1: 35-42 '57. (MLRA 10:3)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(ELECTRON MICROSCOPY) (MUSCLS)

FRANK, G. M. and SAMOSUDOVA, N. V.
Samosudova, N.V.

"Electron Microscopy Examinations of Two Types of Muscle Contraction,"

paper submitted for presentation at Fourth Int'l. Conference on Electron Microscopy, Berlin, GFR, 10-17 Sep '58.

Institute for Biop;hysics, Acad. Sci. USSR.

C-3,800,829, 25 Jul 1958.

SAMOSUDOVA, N.V., Cand Biol Sci -- (diss) "Electron microscopic study of the ~~transversus abdominis~~ cross-striated muscle in various functional states."
Med
Mos, 1959, 20 pp (Acad/Sci USSR) 200 copies (KL, 36-59, 114)

KARPAS, A.M. [translator]; NIKOL'SKAYA, T.A. [translator]; SAMOSUDOVA, N.V. [translator]; FRANK, G.M., prof., red.; RAYSKAYA, N.A., red.; GRIBOVA, M.P., tekhn.red.

[Problems in the electron microscopy of the tissues; collection of articles] Voprosy elektronnoi mikroskopii tkanei; sbornik statei. Moskva, Izd-vo inostr.lit-ry, 1959. 115 p. (MIRA 13:8)

(ELECTRON MICROSCOPY) (TISSUES)

SAMOSUDOVA, N.V.; FRANK, G.M.

Structural reorganization of the transversostriated muscles during contraction. Biofizika 7 no.4:411-416 '62. (MIRA 15:11)

1. Institut biologicheskoy fiziki AN SSSR. Moskva.
(MUSCLES—MOTILITY)

KALAMKAROVA, M.B.; SAMOSUDOVA, N.V.; KRYUKOVA, M.Ye.; OGIYEVETSKAYA, M.M.

Studies on the localization of contractile muscle proteins following denervation with the aid of labeled antibodies. Biofizika 8 no.6:696-698 '63. (MIRA 17:7)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

SAMOSUDOVA, N.V.; KALAMAROVA, M.V.; OGIYEVETSKAYA, M.M.

Localization of actin and tropomyosin in extracted and intact myofibrils. Biofizika 10 no.2:268-271 '65. (MIRA 18:7)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

SAMOSUDOVA, P.A.

ZHILIN, A.S., inzhener; SAMOSUDOVA, P.A., inzhener; STEPANOVA, V.V.inzhener.

Methods and norms for calculating traffic capacity of railroads in relation to water supply. Vest.TSNII MPS 15 no.2:60 S '56.
(MLRA 9:12)

(Railroads--Water supply)

SHNEYDER, Yu.I., kand.biolog.nauk; SAMOSUDOVA, Ye.V.

Incidence of the bacterial wilt of corn in the Soviet Union.
Dokl.Akad.sel'khoz. 24 no.8:39-42 '59. (MIRA 12:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut fitopatologii. Predstavlena sektsiyey zashchity rasteniy Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im.V.I.Lenina.
(Corn(Maize)--Diseases and pests)

L 64442-65

ACCESSION NR: AP5016424 UR/0220/65/034/003/0551/0555
576.809.515/516:632.3

AUTHOR: Samosudova, Ye. V. 9
B

TITLE: Freeze-drying of phytopathogenic bacteria

SOURCE: Mikrobiologiya, v. 34, no. 3, 1965, 551-555

TOPIC TAGS: phytopathology, bacteria, freeze drying, lyophilization

ABSTRACT: Optimal conditions for preserving the viability of freeze-dried phytopathogenic bacteria were investigated in three groups of bacteria: Xanthomonas, Pseudomonas, and Erwinia. In a series of experiments, the effects of freezing conditions, drying conditions, storage conditions, and reconstitution conditions were studied. Findings show that with freeze-drying at temperatures of -18°, -30°, and -75°, the most unfavorable temperature for cell survival is -75° and the most favorable and convenient temperature for freezing before drying is -30°. All representatives of the three phytopathogenic bacteria groups (Xanthomonas, Erwinia and and Pseudomonas) tolerate the freeze-drying process well. The

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L 64442-65
ACCESSION NR: AP5016424

freeze-dried cultures should be stored under vacuum conditions at low temperatures, rather than at room temperature. A residual humidity of 1-2% is most favorable for preserving the viability of freeze-dried phytopathogenic bacteria cultures. Orig. art. has: 4 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut fitopatologii, Moscow (All Union Scientific-Research Institute of Phytopathology)

SUBMITTED: 09Jun64 ENCL: 00 SUB CODE: LS

NR REF SOV: 008 OTHER: 010

Card 2/2

DORCHOMAN, D.; KARDON, B.; KISH. D.; SAMOSVAT, G.S.

Search of the interference of resonance trapping of neutrons with potential capture at the 4.9 ev. resonance level for gold nuclei. Zhur. eksp. i teor. fiz. 46 no.5:1578-1585 My '64. (MIRA 17:6)

1. Ob"yedinennyy institut yadernykh issledovaniy.

ALEKSANDROV, Yu. A.; RYABOV, Yu. V.; SAMOSVAT, G. S.

"Attempt to Determine the Parity of the Ground State of Pu^{239}."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

OIYaI (Joint Inst Nuclear Res)

ACCESSION NR: AP4037567 S/0056/64/046/005/1578/1585

AUTHORS: Dorchoman, D.; Kardon, B.; Kish, D.; Samosvat, G. S.

TITLE: Search for interference of resonance capture of neutrons with potential capture at the 4.9 eV resonance in gold nuclei

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1578-1585

TOPIC TAGS: neutron resonance capture, potential capture, interference, apparatus error, capture cross section, n-Gamma reaction, potential capture cross section, resonance capture cross section, Gamma spectrum

ABSTRACT: This is a continuation of earlier work (preprint OIYaI No. 956, Dubna, 1962), with a greater effort made to eliminate the apparatus effect which was then erroneously mistaken for interference. To detect the interference, the capture cross sections measured by recording different portions of the hard part of the γ

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ACCESSION NR: AP4037567

spectrum from the reaction Au^{197} (n, γ) Au^{198} were compared with the cross section measured by recording the central part of the same spectrum. No interference was observed within the limits of experimental error. The potential capture cross section was estimated to be $\sigma_p < 0.5$ mb assuming that the direct capture mechanism is operating during the emission of all the γ lines with energies in the 5.5--6.5 MeV range. The data are compared with similar results by Wasson and Draper (Physics Letters, v. 6, 350, 1963), whose estimate of the cross section is claimed to be too high. "In conclusion the authors thank F. L. Shapiro for continuous interest in the work and for useful discussions, Ya. Urbanets who participated in one of the stages of the work, G. P. Zhukov and B. Ye. Zhuravlev for operating the electronic equipment, and A. A. Loshkarev for continuous help." Orig. art. has: 3 figures, 5 formulas, and 1 table.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint

Card 2/3

ACCESSION NR: AP4037567

Institute of Nuclear Research)

SUBMITTED: 21Nov63 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: PH NR REF SOV: 008 OTHER: 007

Card: 3/3

BORCHMAN, D.; KARDON, B.; KISH, D.; SAMOSVAT, G.S.;

[Search for the interference of the resonance neutron capture with the potential one in the resonance of gold at 4.9 ev.] Poiski interferentsii rezonansnogo zakhvata neitronov s potentsial'nym v rezonanse zolota 4,9 ev. Dubna, Ob"edinennyi in-t iadernykh issl., 1963. 11 p.
(MIRA 17:7)

L 09058-67 EWT(m)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6031991 SOURCE CODE: UR/0386/66/004/005/0196/0200

AUTHOR: Aleksandrov, Yu. A.; Samosvat, G. S.; Sereeter Zh.; Tsoy Gen Sor

ORG: Joint Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Scattering of kilovolt neutrons by lead and electric polarizability of the neutron

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 5, 1966, 196-200

TOPIC TAGS: neutron scattering, neutron polarization, lead, neutron spectroscopy

ABSTRACT: This is a continuation of earlier work by the authors (Preprint OIYaI, R-2495, Dubna 1965 and elsewhere) on neutron scattering by lead at neutron energies down to 7.5 kev, where it was indicated that the estimate $\alpha_n \leq 20 \times 10^{-42}$ cm^3 for the neutron electric polarizability coefficient, previously obtained by R. M. Thaler (Phys. Rev. v. 114, 827, 1965) in scattering by uranium, can be appreciably lowered. Lead was chosen in the present investigation because it has no strong neutron resonances in the investigated energy range up to 26 kev, thus avoiding the ambiguity connected with neglecting the role of the resonances. The measurements were made with the OIYaI pulsed reactor by the time-of-flight method with a 250 m base and with an energy resolution ranging from 20% at 1 kev to 100% at 26 kev. The effective energy was determined at each point by numerical integration with account of the re-

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L 09058-67

ACC NR: AP6031991 2

solution function, the neutron spectrum, and the energy sensitivity of the detectors. A total of 180 proportional boron counters (type SNMO-5) were used as detectors. The intensity of the neutrons scattered by a hollow lead cylinder of 10 cm diameter and 1 cm wall thickness was measured simultaneously at all energies and 9 values of the scattering angle from 30 to 150°. Reduction of the experimental data yielded the estimate $\alpha_n = (0.3 \pm 9.2) \times 10^{-42}$ cm^3. A more accurate estimate of the polarizability is obtained by simultaneous reduction of the present data and published data on scattering by lead in the 50 - 160 kev interval. Such a reduction yields $\alpha_n = (0.7 \pm 5.4) \times 10^{-42}$ cm^3. It is thus concluded that, with a probability ~68%, the values of α_n range between -4.7 and 6.1 ($\times 10^{-42}$) cm^3 and are of the same order of magnitude as the theoretically expected value (1 - 2) $\times 10^{-42}$ cm^3. The authors thank F. L. Shapiro for interest in the work and useful discussions, and A. A. Loshkarev for help with the measurements. Orig. art. has: 2 figures and 4 formulas.

SUB CODE: 20/ SUBM DATE: 10Jun66/ ORIG REF: 005/ OTH REF: 004

Card 2/2 nat

S/079/60/030/05/39/074
B005/B016

AUTHORS: Geller, B. A., Samosvat, L. S.

TITLE: Elaboration of Syntheses of Organic Compounds Labeled With the Isotope N^{15}

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1590-1594

TEXT: The authors of the present paper devised methods of synthesizing some aromatic nitrogen compounds which are marked with radioactive N^{15}. The following labeled compounds were prepared: Benzamide, aniline, α- and β-naphthyl amine, nitro-benzene. N^{15}-benzamide was synthesized from $N^{15}H_4NO_3$ or another ammonium salt, aqueous sodium hydroxide and benzoyl chloride in benzenic solution according to a method described in publications (Ref. 2). The yield in this synthesis was 93-96%. The labeled excess ammonium salt may be recovered in the form of $N^{15}H_4Cl$, which increases the effective yield up to 97-99%. N^{15}-aniline was obtained from benzamide by

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Elaboration of Syntheses of Organic Compounds Labeled With the Isotope N^{15}

S/079/60/030/05/39/074
B005/B016

Hofmann acid amide degradation. The intermediate N-bromo benzamide was not isolated. The yield of this synthesis was 84-87%. N^{15}-α-naphthyl amine was obtained according to a method described in publications (Ref. 6). This synthesis is made on the basis of $N^{15}H_4Cl$ which is allowed to react with α-naphthol in the presence of anhydrous sodium acetate and glacial acetic acid. The reaction mixture is heated for 8-10 h to 280°. The resultant precipitate is boiled with dilute sodium hydroxide. After cooling it is filtered, the residue is boiled under reflux with dilute hydrochloric acid. The hot solution is filtered. After addition of sodium hydroxide, α-naphthyl amine is isolated from the filtrate by water vapor distillation. The yield of this synthesis is 77-82%. By recovering the labeled excess ammonium chloride, the effective yield may be raised up to 90-92%. The recovery of the ammonium salt is described. N^{15}-β-naphthyl amine was synthesized similarly to N^{15}-α-naphthyl amine from β-naphthol, $N^{15}H_4Cl$, anhydrous sodium acetate, and glacial acetic acid. The yield was 68%, or 78%, respectively (considering the recovered ammonium chloride). N^{15}-nitrobenzene was obtained by nitration of benzene with labeled sodium nitrate and sulfuric acid. The authors determined the optimum conditions for this

Card 2/3

reaction. The best yield is obtained with 80% sulfuric acid in excess (500 ml excess per 1 mole of the nitrate). The performance of this synthesis is described in detail. The yield was 91-94%. There are 2 figures and 9 references, 3 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii imeni L. V. Pisarzhevskogo Akademii nauk USSR (Institute of Physical Chemistry imeni L. V. Pisarzhevskiy of the Academy of Sciences, UkrSSR)

SUBMITTED: May 15, 1959

20712

S/079/60/030/05/54/074
B005/B125

5,32,00
5,3610

AUTHORS: Geller, B. A., Samosvat, L. S.

TITLE: Investigation of the Mechanism of the Condensation of Amino Compounds With the Aid of N^{15}

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1650-1656

TEXT: In the paper by A. I. Brodskiy, R. Yu. Sheynfayn, and B. A. Geller (Ref. 1) the mechanism of the formation reaction of phenyl-α-naphthylamine and of benzarylides in the condensation of two amino compounds was investigated. The authors of the present report studied the mechanisms of the splitting off of the amino group in the condensation of p-aminophenol with aniline, α-naphthylamine and benzamide, in the condensation of n-butylamine with aniline and in the condensation of p and m-chloraniline with α-naphthylamine. The carrying out of these condensations is described in detail. In all of these cases one of the initial components in the amino group was marked with N^{15}. By determination of the content of heavy nitrogen in each of the products which form (secondary amine; ammonium chloride or ammonia) it was determined where the amino group had been split off. Table 1 shows the results of the mass-spectrometric analysis for nitrogen for all

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Investigation of the Mechanism of the Condensation of Amino Compounds With the Aid of N^{15}

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reactions investigated as well as the base constants of the amines concerned in the reaction. In most cases the amino group was split off from only one of the two components. The mechanism of the reaction between two amines depends on in which properties the two amines most differ. α-Naphthylamine always loses its amino group in the condensation with amines of the benzene series regardless of their basicity. This behavior is based on the fact that the stability of the quinoidal structure, the formation of which is favored by the splitting off of the amino group, is greater in naphthalene derivatives than in benzene derivatives. In the condensation of α-naphthylamine with p-aminophenol the amino group is split off from both components. The authors assume that the major direction of this condensation is via the formation of the quinoidal form, where the α-naphthylamine loses its NH_2 group. The splitting off of the amino group of the p-aminophenol is based on the following reactions:

$$HOC_6H_4NH_2 + HOC_6H_4NH_2 \longrightarrow HOC_6H_4NHC_6H_4NH_2 + H_2O \quad (3)$$

$$HOC_6H_4NH_2 + H_2O + HCl \longrightarrow HOC_6H_4OH + NH_4Cl \quad (4)$$

$$HOC_6H_4OH + H_2N^{15}C_{10}H_7 \longrightarrow HOC_6H_4N^{15}HC_{10}H_7 + H_2O \quad (5)$$

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Investigation of the Mechanism of the Condensation of Amino Compounds With the Aid of N^{15}

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Table 2 shows the dependence of the content of heavy nitrogen in each of the two reaction products on the length of the reaction. When the two amines strongly differ in their basicities, the stronger base loses its amino group after the mechanism of a nucleophilic substitution. In the condensation of amines with benzamide the ammonia which forms comes entirely from the amide. Also here the splitting off takes place after the mechanism of a nucleophilic substitution, where with the intermediate formation of the ortho form of the acid amide the ammonia splits off. This mechanism agrees with the assumption of Poray-Koshits (Ref. 5) for the acylation of primary amines. It was determined that in the systems studied no exchange of the nitrogen or the amino group occurred between the two amines under the conditions of the condensation. All operations carried out are described in an experimental section. The authors thank Academician of the Akademiya nauk Ukrainskoy SSR (Academy of Sciences of the Ukrainskaya SSR) A. I. Brodskiy for his assistance. In the present report an apparatus according to D. Rittenberg (Ref. 12) is mentioned. There are 2 tables and 12 references, 5 of which are Soviet.

80712

Investigation of the Mechanism of the Condensation of Amino Compounds With the Aid of N^{15}

S/079/60/030/05/54/074
B005/B125

ASSOCIATION: Institut fizicheskoy khimii imeni L. V. Pisarzhevskogo Akademii nauk Ukrainskoy SSR (Institute of Physical Chemistry imeni L. V. Pisarzhevskiy of the Academy of Sciences of the Ukrainskaya SSR)

SUBMITTED: April 16, 1959

Card 4/4

GELLER, B.A.; SAMOSVAT, L.S.

Mechanism of reactions between phenylhydrazine and nitroso compounds studied with the aid of N^{15}. Zhur.ob.khim. 31 no.5:1681-1684 My '61. (MIRA 14:5)

1. Institut fizicheskoy khimii imeni L.V.Pisarzhevskogo Akademii nauk Ukrainskoy SSR.
(Hydrazine) (Nitroso compounds)

GELLER, B.A.; SAMOSVAT, L.S.

Use of N^{15} in studying the mechanism of the reaction of nitroso aryls with hydrazoic acid. Dokl. AN SSSR 141 no.4:847-850 D '61. (MIRA 14:11)

1. Institut fizicheskoy khimii im. L.V. Pisarzhevskogo AN USSR. Predstavleno akademikom M.M. Shemyakinym.

(Nitroso compounds) (Hydrazoic acid)

GELLER, B.A.; SAMOSVAT, L.S.

Mechanism of the interaction of nitroso aryls with hydronitric acid studied with the aid of N^{15}. Zhur.ob.khim. 32 no.10:3202-3206 O '62. (MIRA 15:11)

1. Institut fizicheskoy khimii imeni L.V. Pisarzhevskogo AN Ukrainskoy SSR.
(Nitroso compounds) (Hydrazoic acid) (Nitrogen—Isotopes)

GELLER, B.A.; SAMOSVAT, L.S.

Hydrogen exchange between the amino group and the aromatic ring. Zhur.ob.khim. 33 no.12:4024-4025 D '63. (MIRA 17:3)

1. Institut fizicheskoy khimii imeni L.V.Pisarzhevskogo AN UkrSSR.

GELLER, B.A.; SAMOSVAT, L.S.

Study of the mechanism of rearrangement of nitroaminopyridine by means of N^{15}. Zhur.ob.khim. 34 no.2:613-616 F '64. (MIRA 17:3)

1. Institut fizicheskoy khimii imeni L.V.Pisarzhevskogo AN UkrSSR.

SAMOSYUK, G.P.

Goursat's periodic problem [with summary in English, p.210]. Vest. Len.un. 12 no.1:97-109 '57. (MLRA 10:5)
(Differential equations, Partial) (Diffraction)

13500

S/042/60/015/005/014/016XX
C111/C222

AUTHOR: Samosyuk, G.P.

TITLE: A Special Problem of Goursat

PERIODICAL: Uspekhi matematicheskikh nauk, 1960, Vol.15, No.5, pp.183-186

TEXT: The author considers the problem

(1) $\Delta u = \frac{\partial^2 u}{\partial t^2}$,

(2) $u|_{r=t} = \phi(\theta, \varphi)$

in spherical coordinates, where ϕ is continuous in $0 \leq \theta \leq \pi$, $0 \leq \varphi \leq 2\pi$. By the introduction of homogeneous coordinates $r_1 = \frac{r}{t}$, $\theta = \theta$, $\varphi = \varphi$, (1)-(2) changes in: determine in the domain $r_1 < 1$ that solution of

(3) $(1-r_1^2)\frac{\partial}{\partial r_1}(r_1^2 \frac{\partial v}{\partial r_1}) + \frac{1}{\sin\theta}\frac{\partial}{\partial\theta}(\sin\theta \frac{\partial v}{\partial\theta}) + \frac{1}{\sin^2\theta}\frac{\partial^2 v}{\partial\varphi^2} = 0$

which satisfies the condition

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A Special Problem of Goursat

(4) $v|_{r_1=1} = \phi(\theta, \varphi)$.

The author puts $v(r_1,\theta,\varphi) = R(r_1)Y(\theta,\varphi)$ and applies a separation of the variables. Finally the author obtains for the solution of (3)-(4):

$$v(r_1,\theta,\varphi) = \frac{1}{4\pi}\iint_{\sigma} \phi(\theta',\varphi') \frac{1-r_1^2}{(1-r_1\cos\gamma)^2}\, d\omega,$$

where σ is the surface of the unit sphere, $\cos\gamma = \cos\theta\cos\theta' + \sin\theta\sin\theta'\cos(\varphi-\varphi')$, $d\omega = \sin\theta' d\theta' d\varphi'$. According to this, for the solution of (1)-(2) it follows

(9) $$u(r,\theta,\varphi,t) = \frac{1}{4\pi}\iint_{\sigma} \phi(\theta',\varphi') \frac{t^2-r^2}{(t-r\cos\gamma)^2}\, d\omega.$$

The author proves directly whether (9) really satisfies (1) and (2). S.L.Sobolev is mentioned in the paper. There are 5 references: 2 Soviet, 2 German and 1 American.

SUBMITTED: February 27, 1960

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SAMOSYUK, G.P.; VESHEV, A.V.

The field of a point source of current in the presence of a sphere. Uch. zap. LGU no.286:3-12 '60. (MIRA 14:3)
(Electric prospecting)

20759

S/043/61/000/001/001/010
C111/C222

24,7000 1043, 1160, 1143

AUTHOR: Samosyuk, G.P.

TITLE: Solution of a one-dimensional problem of diffusion with integral-differential boundary value conditions

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no.1, 1961, 5-12

TEXT: In (Ref.1: A.N.Murin, G.P.Samosyuk, Diffuziya primesey v beskonechnoy plastinke, Fizika tverdogo tela [Diffusion of the impurities in an infinite plate, Physics of the rigid body], 1961) the author considers the diffusion of impurities in a preheated infinite semiconductor plate of finite thickness for a surface concentration variable with the time. The problem leads mathematically to the determination of a solution of

$$DC_{xx} = C_t \quad (-1 < x < 1,\ t > 0), \tag{1}$$

which satisfies the initial condition

$$C(x,0) = C_0 \quad (-1 < x < 1) \tag{2}$$

and the boundary conditions

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Solution of a one-dimensional...

$$\left.\begin{aligned} L_1C \equiv DC_x(-1,t)-KC(-1,t)+ADe^{-Lt}\int_0^t C_x(-1,\tau)e^{L\tau}d\tau = 0, \\ L_2C \equiv DC_x(1,t)+KC(1,t)+ADe^{-Lt}\int_0^t C_x(1,\tau)e^{L\tau}d\tau = 0 \end{aligned}\right\} (t>0), \quad (3)$$

where D,K,L,A are positive constants and C_0 is a constant. At first the author obtains formally the solution

$$C(x,t) = -\frac{C_0}{2\pi i}\int_{\beta-i\infty}^{\beta+i\infty}\frac{N(p)}{p\varphi(p)}\operatorname{ch}\sqrt{p/D}\,x\exp(pt)dp+C_0 \quad (\beta>0), \quad (10)$$

where

$$M(p) = D(p+L+A); \quad N(p) = K(p+L) \quad (7)$$

and

$$\varphi(p) = M(p)\sqrt{p/D}\operatorname{sh}\sqrt{p/D}\,1+N(p)\operatorname{ch}\sqrt{p/D}\,1. \quad (9)$$

Then it is proved that (10) really satisfies (1)-(3).
Lemma 1: The point p = 0 is no ramification point of $\varphi(p)$ or of the integrand of (10).

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Solution of a one-dimensional...

Lemma 2: All simple zeros of $\varphi(p)$ lie on the left-hand real semiaxis of the (p)-plane and form a countable set. These roots have the asymptotic behavior $p_m = -\frac{\pi^2 p}{l^2} O\left[(m+n)^2\right]$, where n is an integer. Let C_m be a circle around the origin of the (p)-plane with the radius

$$R_m = \frac{D\left[2(m+n)+1\right]^2 \pi^2}{4l^2}, \tag{25}$$

where $A_1 > 0$ is a certain constant.

The lemmas permit to write C(x,t) in the form

$$C(x,t) = 2C_0 \sum_{m=0}^{\infty} F_m N_m \cos \lambda_m x e^{-\lambda_m^2 D t}, \tag{33}$$

where F_m is given by

$$F_m = \frac{\varepsilon_m \sqrt{M_m^2 \lambda_m^2 + N_m^2}}{\lambda_m^2 \left[l(M_m^2 \lambda_m^2 + N_m^2) + M_m N_m + 2KD^2 A \lambda_m^2\right]}, \tag{32}$$

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Solution of a one-dimensional...

$\delta_m = \mathrm{sgn}(N_m \sin \lambda_m l)$, $\lambda_m^2 = \frac{p_m}{D}$, M_m and N_m are values of M and N for $p = p_m$.

Now it is strongly proved that (33) is a solution of (1)-(3).
There are 2 figures, 1 Soviet-bloc and 2 non-Soviet-bloc references.
The two references to English-language publications read as follows:
F.M.Smits, R.C.Miller. Rate limitation at the surface for impurity diffusion in semiconductors. Phys.rev. 104, no.5, pp.1242, 1956.
R.Bullough, R.C.Newman, I.Wakefield. Diffusion across a semiconductor - vapour interface. Proc.Phys.soc., 72, pt, 3, no.465, pp.369-379, 1958.

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20105

S/181/61/003/002/003/050
B102/B204

9,4310 (and 1035, 1143)

AUTHORS: Murin, A. N. and Samosyuk, G. P.

TITLE: Diffusion of impurities in an infinite plate

PERIODICAL: Fizika tverdogo tela, v. 3, no. 2, 1961, 342-349

TEXT: The present paper deals with a theoretical investigation of the diffusion of impurities in an infinite semiconductor plate located in a reservoir, which is evacuated at a finite rate. Similar tasks have already been dealt with, however, only for the case of a semi-infinite semiconductor or a very thick plate respectively. The model underlying the calculations in this case assumes that the impurity atom in the solid is in a periodic potential field, as shown in Fig.1. E_D corresponds to the activation energy of the diffusion process, E_1 is the energy, which the impurity atom would have to possess in order to be able to leave the solid and to penetrate into the gaseous phase ($E_1 \simeq E_D$); E_2 is the activation energy for the penetration of an atom adsorbed on the surface of the solid into this solid; E_3 is the corresponding energy for an atom still

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Diffusion of impurities...

in the gaseous phase. The number of impurity atoms leaving the semiconductor per unit area of its surface per unit time is $aC(-1,t)\nu_1\alpha_1\exp(-E_1/kT)$, where a is the interatomic distance in the direction perpendicular to the surface, $C(-1,t)$ is the concentration of the impurity atoms on the surface at the time t, ν_1 is a parameter corresponding to the entropy factor, which is a function of the atomic vibration frequency, α_1 is a geometry factor. The number of atoms penetrating the solid from the gas is given by $C_g(t)\bar{v}\beta_o\exp(-E_3/kT)$. $C_g(t)$ is the concentration of the impurity atoms in the gaseous phase, $\bar{v}$ - the mean velocity of the atoms in the gas, β_o - a constant, which considers the direction of the atom hitting the surface of the body. The number of the penetrating atoms to be adsorbed is $Q_A(t)\nu_2\alpha_2\cdot\exp(-E_2/kT)$, where Q_A is the number of adsorbed atoms per unit area. If the impurity concentration in the gaseous phase is small, then $Q_A = a\Phi C_g(t)$, where Φ is a constant. The problem consists only in an integration of the equation

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Diffusion of impurities...

$D\frac{\partial^2 D(x,t)}{\partial x^2} = \frac{\partial C(x,t)}{\partial t}$ (11), where D is the diffusion coefficient of the impurity atoms, with the following boundary conditions:

$\mathcal{L}_{-1}C \equiv D\frac{\partial C(-1,t)}{\partial x} - KC(-1,t) + A'D\exp(-L't)\int_0^t \frac{\partial C(-1,t)}{\partial x}\exp(L't)dt = 0$

(8). For $x = 1$, $\mathcal{L}_1 C \equiv D\frac{\partial C(1,tt)}{\partial x} + KC(1,t) + A'D\exp(-L't)\int_0^t \frac{\partial C(1,t)}{\partial x}\exp(L't)dt$ $= 0$ (9) holds with $L' = \frac{L}{V'}$, $A' = \frac{KK_g A}{V'}$. The initial condition is: $C(x,0) = C_0$ (10). For the purpose of solving this equation, one introduces: $u(x,p) = \int_0^\infty C(x,t)\exp(-pt)dt$, and after some intermediate steps C(x,t) is obtained in the following form:

$$C(x,t) = -\frac{C_0}{2\pi i}\int_{\beta-i\infty}^{\beta+i\infty}\frac{N(p)}{p\varphi(p)}\operatorname{ch}\sqrt{\frac{p}{D}}x\exp(pt)\,dp + C_0, \quad (\beta>0), \quad (16)$$

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Diffusion of impurities... $\operatorname{ctg}\lambda_m l = \frac{M_m\lambda_m}{N_m}$,

which with $M_m = D(-\lambda_m^2 D + L' + A')$; $N_m = K(-\lambda_m^2 D + L')$, (18)

$$\sin\lambda_m l = \frac{\delta_m N_m}{\sqrt{M_m^2\lambda_m^2 + N_m^2}};\quad \cos\lambda_m l = \frac{\delta_m M_m\lambda_m}{\sqrt{M_m^2\lambda_m^2 + N_m^2}}, \tag{19}$$

$\delta_m = \operatorname{sng}(N_m \sin\lambda_m l)$.

and $$C(x,t) = 2C_0 \sum_{m=1}^{\infty} \lambda_m^{-1}\delta_m F_m N_m \sqrt{M_m^2\lambda_m^2 + N_m^2}\cos\lambda_m x \exp(-D\lambda_m^2 t), \tag{20}$$

где $F_m = [l(M_m^2\lambda_m^2 + N_m^2) + M_m N_m + 2KD^2 A'\lambda_m^2]^{-1}$.

Обозначим

$$\bar{C}(x,t) = 2C_0 KL' \sum_{m=1}^{\infty} \delta_m\lambda_m^{-1} F_m \sqrt{M_m^2\lambda_m^2 + N_m^2}\cos\lambda_m x \exp(-D\lambda_m^2 t), \tag{21}$$

gives the following solution: $C(x,t) = \bar{C}(x,t) + L'^{-1}\frac{\partial\bar{C}(x,t)}{\partial t}$ (22). The function (20) is the solution of the problem (8) - (11) and $\bar{C}(x,t)$ is the solution of (11), which satisfies the initial condition (10) and the boundary conditions $\mathcal{L}_{-1}\bar{C} = -C_0 K\exp(-L't)$, $\mathcal{L}_1\bar{C} = C_0 K\exp(-L't)$. As solution

of (8) - (11) with L' = 0 one obtains

$$C_1(x, t)=\frac{C_0A'l}{K+A'l}+2C_0K\sum_{m=1}^{\infty}\delta'_mF'_m\sqrt{M'^2_m+K^2\lambda^2_m}\cos\lambda_m x\exp(-D\lambda^2_m t), \quad (29)$$

где

$$M'_m=-D\lambda^2_m+A';\ F'_m=[lM'^2_m+(lK+D)K\lambda^2_m+A'K]^{-1};$$

$$\delta'_m=\operatorname{sng}(\sin\lambda_m l). \quad (30)$$

and with $\sin\lambda_m l = \delta'_m K\lambda_m/\sqrt{M'^2_m + K^2\lambda^2_m}$ and $\cos\lambda_m l = -\delta'_m M'_m/\sqrt{M'^2_m + K^2\lambda^2_m}$.

$$\left.\begin{aligned}2KA'\sum_{m=1}^{\infty}F'_m&=A'l\,(K+A'l)^{-1},\\ 2KD\sum_{m=1}^{\infty}\lambda^2_mF'_m&=1.\end{aligned}\right\} \quad (32)$$

$$\frac{C_1(l, t)}{C_0}=\frac{A'l}{K+A'l}+2KD\sum_{m=1}^{\infty}\lambda^2_mF'_m\exp(-D\lambda^2_m t)-$$

$$-2KA'\sum_{m=1}^{\infty}F'_m\exp(-D\lambda^2_m t), \quad (33)$$

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Diffusion of impurities...

$$\frac{K_g C_g(t)}{C_0} = \frac{A'l}{K + A'l} - 2KA' \sum_{m=1}^{\infty} F'_m \exp(-D\lambda_m^2 t), \tag{34}$$

$$C_g(t) = \frac{1}{2}\frac{A}{V'}\int_{-l}^{l}[C_0 - C_1(x, t)]\,dx = -\frac{DA}{V'}\int_0^t \frac{\partial C_1(l, t)}{\partial x}\,dt.$$

$$\left.\begin{aligned} &\frac{A'l}{K + A'l}[1 - \exp(-D\lambda_1^2 t)] + 2KD\lambda_1^2 F'_1 \exp(-D\lambda_1^2 t) \leqslant \frac{C(l, t)}{C_0} \leqslant \\ &\leqslant \frac{A'l}{K + A'l} + (1 - 2KA'F'_1)\exp(-D\lambda_1^2 t), \\ &\frac{A'l}{K + A'l}[1 - \exp(-D\lambda_1^2 t)] \leqslant \frac{K_g C_g(t)}{C_0} \leqslant \frac{A'l}{K + A'l} - \\ &\qquad - 2KA'F'_1 \exp(-D\lambda_1^2 t). \end{aligned}\right\} \tag{35}$$

hold. By means of these formulas numerical computations for the following cases were carried out: Case a_o: $0.4K_gD/K = V'/A$, $K/D = 20\ cm^{-1}$; case a_1: $2K_gD/K = V'/A$, $K/D = 20\ cm^{-1}$; case a_2: $4K_gD/K = V'/A$, $K/D = 20\ cm^{-1}$;

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Diffusion of impurities...

case a_3: $8K_gD/K = V'/A$, $K/D = 20\ cm^{-1}$; case a_4: $4K_gD/K = V'/A$, $K/D = 200\ cm^{-1}$. For these cases, Fig. 5 shows the impurity concentration on the surface, and Fig.6 the impurity concentration in the gaseous phase. The broken lines give the corresponding horizontal asymptotes: For a_0, $\mu_0 \simeq 1.58$, for a_1, a_2, a_3 is $\mu_0 < \pi/2$ and for a_4 it is $\mu_0 = 5$. There are 6 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. Zhdanova
(Leningrad State University imeni Zhdanov)

SUBMITTED: March 29, 1960

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Diffusion of impurities...

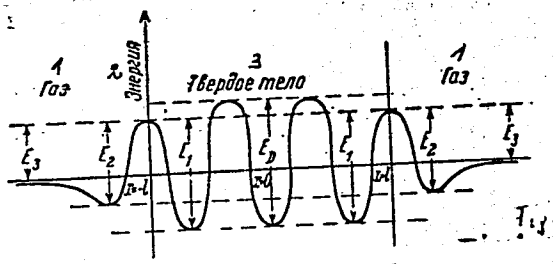

Fig. 1

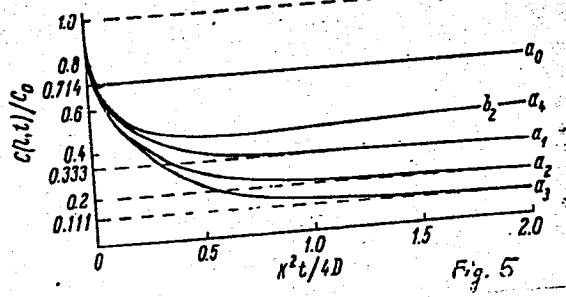

Fig. 5

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Diffusion of impurities...

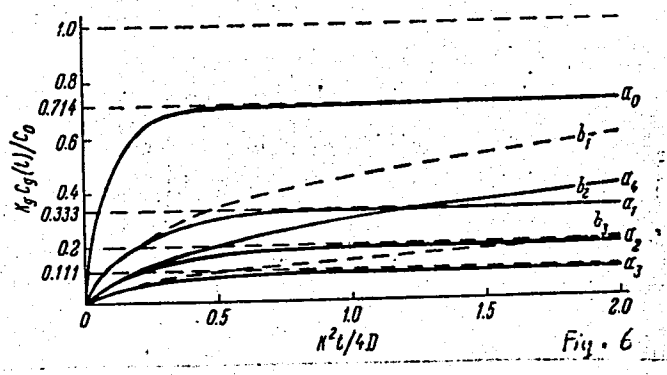

Fig. 6

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9,4300 (and 1043, 1155)

AUTHORS: Murin, A. N., Lur'ye, B. G., Banasevich, S. N., Samosyuk, G. P., Ignatovich, Ya. L.

TITLE: Diffusion and electrolytic migration of P^{32} in KCl-crystals irradiated by 660-Mev protons

PERIODICAL: Fizika tverdogo tela, v. 3, no. 2, 1961, 398-407

TEXT: One of the many possibilities of introducing impurity atoms into a crystal lattice consists in irradiating the latter with neutrons or protons in such a manner that nuclear transformations may occur. Thus, the introduction of P^{32} into alkali chlorides with neutron irradiation is possible as a result of the reaction $Cl^{35}(n,\alpha)P^{32}$ (Ref. 1), in the case of proton irradiation of KCl as a result of the reactions $Cl_{17}(p; 3p,xn)P^{32}_{15}$ and $K_{19}(p; 5p,xn)P^{32}_{15}$. The authors investigated diffusion and migration of the P^{32} formed by proton irradiation of KCl, and gave a detailed report on the results obtained. The KCl-single

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Diffusion and electrolytic ...

crystals used were first heated in an N_2-atmosphere at 700°C for several hours, after which they were slowly cooled to room temperature. Irradiation with 660-Mev protons was carried out on the synchro-cyclotron of the Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research); the crystals had a size of 1.5 × 1.5 × 0.2 cm and were irradiated perpendicular to the quadratic surface. In view of the fact that with such an irradiation, also Be^7(53.6 d), Na^{24}(15.0 h), P^{32}(14.5 d), S^{35}(87 d), and Ar^{37}(32 d) may be formed apart from short-lived isotopes, special investigations were carried out for the purpose of determining their relative intensities. These investigations are described in the introduction; they led to the result that one week after the end of irradiation, 99% of the activity measured by means of an end-window counter must be ascribed to P^{32}. The specimens irradiated were heated in quartz tubes, through which pure N_2 streamed, by means of an electric furnace, and the diffusion was investigated. The conditions of heat treatment varied between 2 hours at 736°C up to 190 hours at 650°C. For the purpose of

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investigating the edge effect with respect to activity distribution, 10 μ thick layers were taken off by means of a microtome parallel to the quadratic surface, and their activities were measured. The diffusion coefficient of P^{32} was calculated according to the approximation formula $(C_o-C)/C \cdots \exp(-x^2/4Dt)$, where C_o is the initial concentration, C - the concentration at the time t at a distance x from the crystal surface. The distribution of P^{32} in the KCl-crystal after heating for 190 hours to 650°C is shown by Fig. 1 (curve a: $D = 1.76 \cdot 10^{-9} cm^2 sec^{-1}$, curve b: $D = 1.87 \cdot 10^{-9} cm^2 sec^{-1}$). An investigation of the temperature dependence of the diffusion coefficient within the high temperature range showed that log D depends linearly on 1/T. From the inclination of the straight line, the activation energy of diffusion was calculated as amounting to 3.2 ev. The effect produced upon the diffusion of P^{32} in KCl by a constant electric field was investigated on a system of 3 crystals (at 736°C). Fig. 3 shows the activity distribution after heating for 8 hours; at first, only the crystal denoted by I was

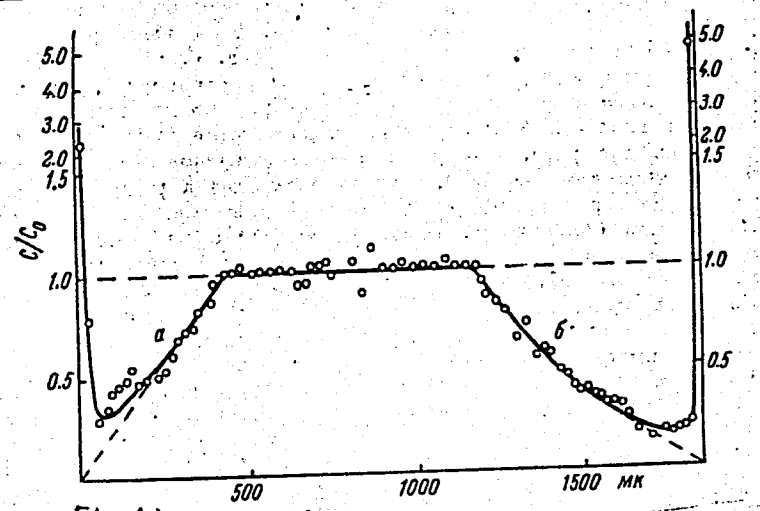
active. Migration may be distinctly seen from Figs. 4 and 5. At 4 different field strengths, 4 series of experiments were carried out. The numerical results of these experiments are given in the table. The charge q of the phosphor ions was calculated according to the Einstein relation $\mu/D = q/kT$. The results obtained by the investigations are finally theoretically dealt with and discussed in detail. The results obtained indicate that phosphorus in potassium chloride together with chlorine ions form negative complex ions $(PCl_6)^{-1}$. The phosphor then enters the complex in the form $(P^{+5}4K_{\square}^{+}6Cl^{-1})^{-1}$, where $K_{\square}^{+}$ is a K^{+} vacancy. The authors finally thank Professor V. P. Dzhelepov, Director of the Laboratoriya yadernykh problem OIYaI (Laboratory for Nuclear Problems of the OIYaI), for his interest. There are 7 figures, 1 table, and 11 references: 4 Soviet-bloc and 7 non-Soviet-bloc.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

S/181/61/003/002/012/050
B102/B204

Diffusion and electrolytic ...

SUBMITTED: April 15, 1960 (initially) and August 31, 1960 (after revision)



Card 5/9 Fig. 1

S/181/61/003/002/012/050
B102/B204

Diffusion and electrolytic ...

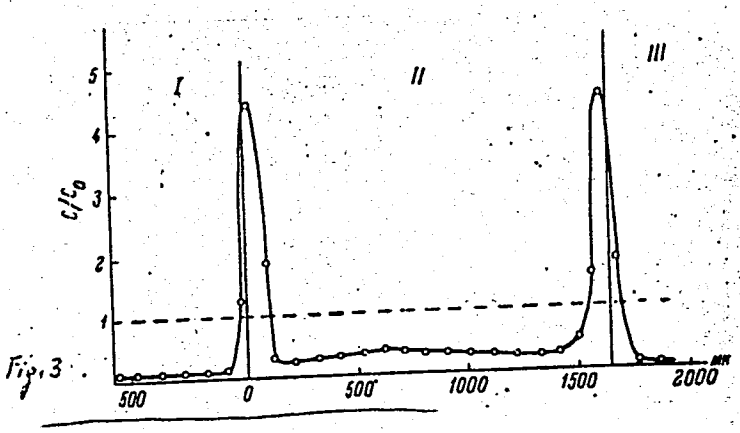


Fig. 3.

Card 6/9

S/181/61/003/002/012/050
B102/B204

Diffusion and electrolytic ...

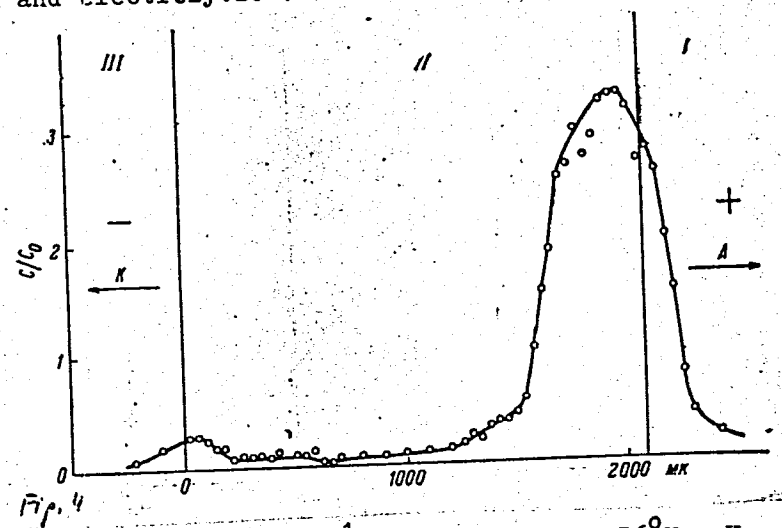


Fig. 4

Legend to Fig. 4: E = 40 v.cm^{-1}, t = 8 hr, T = 736°K; K - cathode, A - anode

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S/181/61/003/002/012/050
B102/B204

Diffusion and electrolytic ...

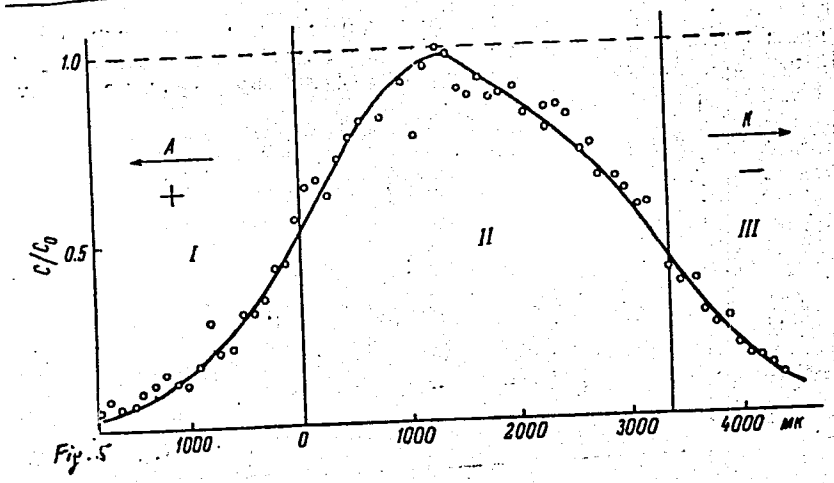

Fig. 5

Legend to Fig. 5: E = 9 v.cm^{-1}, t = 12.5 hr, T = 736°K;

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Diffusion and electrolytic ...

Номер опыта	Время отжига, час.	E, в · см$^{-1}$	$\frac{A_2}{A_1}$	$\frac{\mu}{D}$, в$^{-1}$	$q = Ze$, в зарядах электрона	$q_{ср.} \pm \Delta q_{ср.}$
1	8.0	10	4.32	2.62	0.232	0.191 ± 0.045
2	10.3	5.6	1.78	2.12	0.186	
3	8.0	51	8.20	1.22	0.107	
4	8.0	40	23.6	2.84	0.240	

Legend to the table: 1) Number of experiments. 2) Duration of heating in hours. 3) E in v.cm^{-1}. 4) Ratio of total activities accumulated after heat treatment on the anode- and cathode side of the irradiated crystal. 5) μ/D in v^{-1}, μ is the mobility of the phosphorus ions. 6) $q = Ze$, in electron charges. 7) $q_{mean} + \Delta q_{mean}$.

Card 9/9

VESHEV, A.V.; LYUBTSEVA, Ye.F.; SAMOSYUK, G.P.

Determination of the effective parameters of a medium in the field of a finite grounded cable. Uch. zap. LGU no.320:3-63 '63. (MIRA 16:9)

(Electric prospecting) (Aeronautics in geology)

VESHEV, A.V.; LYUBTSEVA, Ye.F.; SANOSYUK, G.P.

Determining the effective parameters of the medium in the field of a finite grounded cable. Part 2. Uch. zap. LGU no.324:174-249 '64. (MIRA 18:4)

SAMOT, Stefan, mgr

The laboratory for problems of industrial psychology has started its activities in the Cellulose and Paper Works in Ostroleka.
Przegl papier 18 no.10:327-328 O '62.

1. Ostrolecka Fabryka Celulozy i Papieru, Ostroleka.

SAMOTAYEV, V.V.

Prevention of gastrointestinal complications following gastric resection. Khirurgiia, Moskva no. 2:30-36 Feb 1953. (CLML 24:2)

1. Deceased. 2. Of the Faculty Surgical Clinic imeni Academician N.N. Burdenko. (Director -- Honored Worker in Science Prof. N. N. Yelanskiy), First Moscow Order of Lenin Medical Institute.

PIS'MAN, I.I.; KAS'YANOV, V.V.; DAMIN, M.A.; Prinimali uchastiye: SAMOTAYEVA, O.A.; SALIMOVA, T.M.

Production of α-butylene by the dehydration of n-butyl alcohol on aluminum oxide A-1. Report No.5: Some problems of kinetics. Azerb. khim. zhur. no.5:85-92 '63 (MIRA 17:8)

SAMOTESOV, N.V.

OFENGENDEN, A.M.; SAMOTESOV, N.V.

Interfactory institute for the improvemement of technological and quality control of the production. Metallurg no.9:24-28 S '56.
(MLRA 9:10)

1. Rukovoditel' martenovskoy gruppy TSentral'noy zavodskoy laboratorii (for Ofengenden).2. Nachal'nik Otdela tekhnicheskogo kontrolya Stalinskogo metallurgicheskogo zavoda (for Samotesov).
(Metallurgical research)

SOV/130-58-6-11/20

AUTHORS: Samotesov, N.V. and Ratsevich, L.R.

TITLE: Automatic Clamping Frame for Blanks During Rolling (Avtomaticheskaya zazhimnaya korobka propuskov)

PERIODICAL: Metallurg, 1958, Nr 6, pp 25 - 27 (USSR)

ABSTRACT: The works are supplying spring steel strip with parabolic edges made of the steel 50KhGA to the Gor'kovskiy avtozavod (Gor'kiy Motor Works). For a long time, a large quantity of material had to be scrapped due to whiskers at the strip edge resulting from the use of a manually operated clamping frames in the sizing rolls. In the case of manual clamping, the operator could not close the roll-pass simultaneously with feeding the material into the sizing rolls and, as a result of this, whiskers were produced on the edge of each strip for a length of 4 to 5 mm. In this paper, an original design is described of an automatic clamping device of roll-passes, the installation of which enabled liquidating fully the rejects due to this fault. A sketch of the system is shown in Figure 1.

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Automatic Clamping Frame for Blanks During Rolling

Figure 2 shows the automatic equipment for generating a current impulse for actuating the electromagnetic coil. The sketch, Figure 4, shows the design of the system which produces the clamping force. The whole system is based on utilizing the elastic deformation of the rolls during feeding-in of the blank to push upwards the textolite end of a contact-closing rod. This results in the closing of an electric circuit which, in turn, actuates the clamping device. To reduce danger to the operating personnel, the operating voltage in the circuit of the regulator is 36 V. A rolling stand, fitted with such an automatic clamping device, has so far been operating satisfactorily for two years.

SOV/130-58-6-11/20

Automatic Clamping Frame for Blanks During Rolling

There are 4 figures.

ASSOCIATION: Stalinskiy metallurgicheskiy zavod (Stalino: Metallurgical Works)

Card 3/3 1. Rolling mills - Equipment 2. Clamps - Design

AUTHOR: Samotesov, N.V. SOV/130-58-6-15/20

TITLE: Organization of Product Quality Control (Ob organizatsii kontrolya kachestva produktsii)

PERIODICAL: Metallurg, 1958, Nr 6, pp 32 - 34 (USSR)

ABSTRACT: This is a further contribution to the correspondence on the organisation of quality control in iron and steel works initiated by an article in Metallurg, 1957, Nr 9, by N.P. Inozemtsev, Ya.I. Sokol, I.F. Ryseva, D.A. Tarasenko and S.I. Zamyatina. The author agrees on the need for a re-examination of the whole question and mentions that at the Stalino Metallurgical Works, quality-control department personnel have been completely eliminated in the blast furnace and raw-materials departments without deleterious effects. He goes on to discuss briefly quality control in the steel melting shop (where a large control staff remains) and then, in more detail, that in the rolling mills. In the latter are employed 75% of the total quality-control department staff, 55% being employed in control of the final product. The author states that these high percentages are not confined to the Stalino Works and that much work has been done on mechanisation of control operations. As an example of this he gives the 250-mill at the works, where a mechanical rack

Cardl/2

(Figure 8) has been installed. With this, all sections of ordinary and quality steels of normal and uniform lengths are examined, except steels for export. Rolled products can be cut simultaneously into two uniform lengths up to 12 m. The author states that the mechanization described has freed 12 quality controllers and 9 mill workers for other duties. He concludes that experience at the Stalino and other works shows that automation and mechanization can lead to reductions in control staff, urges research institutes to develop appropriate equipment and methods and suggests that the 1952 quality-control departmental instructions of the former Ministerstvo chernoy metallurgii SSSR (Ministry of Ferrous Metallurgy of the USSR) should be re-examined. There are 2 figures.

ASSOCIATION: Stalinskiy metallurgicheskiy zavod (Stalino Metallurgical Works)

Card 2/2

1. Steel -- Manufacture 2. Steel - Quality control
3. Quality control - Organization

SAMOTEYEV, G.V., gornyy inzhener.

Ventilating development stopes by means of air shafts. Ugol' 32 no.4:27-28 Ap '57. (MLRA 10:5)
(Moscow Basin--Mine ventilation)

SAMOTEYEV, G.V.; gornyy inzhener.

Mining Moscow Basin coal fields through one shaft, boreholes and single main direction drifts. Ugol' 32 no.9:9-10 S '57. (MIRA 10:10)

(Moscow Basin--Coal mines and mining)

SAVOSTIN, G.A.,inzh.; TERESHCHENKO, F.P.,inzh.; NECHIPORENKO, M.M.; SAMOTEYEV, G.V.; DEMIKHOV, I.,inzh.

Concerning the article "Increase cross sections of haulageways" Bezop.truda v prom. 2 no.4:22-24 Ap '58. (MIRA 11:4)

1. Institut "Krivbassproyekt" (for Savostin, Tereshchenko). 2.Upravleniye Tul'skogo okruga Gosgortekhnadzora SSSR (for Nechiporenko, Samoteyev).
(Mining engineering)

SAMOTEYEV, G.V., inzh.

Using ventilation shafts for diagonal ventilation of mines. (MIRA 12:6)
Bezop.truda v prom. 3 no.4:7 Ap '59.
(Mine ventilation)

SAMOTEYEVA, K.I.

High speed conveyer transportation. Mast.ugl.2 no.12:6-8 D '53. (MLRA 6:11)

1. Starshiy nauchnyy sotrudnik Podmoskovnogo nauchno-issledovatel'skogo ugol'nogo instituta. (Coal handling machinery)

HUD', U.Kh., gornyy inzhener; SAMOTEYEVA, K.I., gornyy inzhener.

Remarkable experience of machinists of PK-2m coal cutting combines. Mekh. trud.rab. 7 no.8:24-28 Ag '53. (MLRA 6:8)
(Coal-mining machinery)

SAMOTEYKIN, Mikhail Alekseyevich

Of the Influence of Higher Pressure on Circulatory Vessels of the Lung

Dissertation for candidate of a Medical Science degree. Chair of Pathological Anatomy (head, Prof. A.M.Antonov) Saratov Medical Institute, 1954.

SAMOTEYKIN, M. A.

"The Effect of Increased Blood Pressure on Pulmonary Blood Vessels." Cand Med Sci, Saratov Medical Inst, Saratov, 1954. (RZhBiol, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

SAMOTEYKIN, M. A.

T-5

USSR/General Problems of Pathology - Tumors.

Abs Jour : Ref Zhur - Biol., No 3, 1958, 12789

Author : Rutenberg, M.D., Samoteykin, M.A.

Inst : Not given

Title : A Case of Diffuse Malignant Arachnoidendothelioma in a Seven-Year Old Child.

Orig Pub : Tr. Blagoveshchen. med. in-ta, 1956, 2, 318-320

Abstract : This is a presentation of the clinical course and pathoanatomic data of a rare case of extremely malignant tumor in a seven-year old boy. Death ensued 25 days after the disease was discovered and 12 hours following trephining. Autopsy revealed an enlarged brain, leveling of the cerebral gyri and thickening and opacification of the arachnoid membrane. Microscopically this was a very vascular polymorphocellular neoplasm with numerous connective

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